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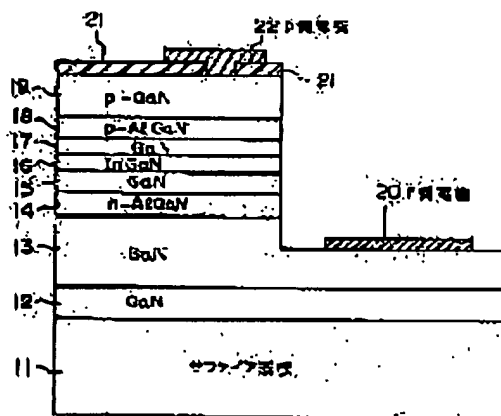
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(54) NITRIDE BASE SEMICONDUCTOR ELEMENT AND ITS MANUFACTURING METHOD

(57)Abstract:

PROBLEM TO BE SOLVED: To realize the duration and enhancement of the reliability, by eliminating the heat treatment after growing process to materialize the cost down and enhancement of productivity for improving the quality of a p type conductive layer.

SOLUTION: This semiconductor element is composed of a laminated structure made of at least an n type $\text{In}_x\text{Al}_y\text{Ga}_z\text{B}_{1-x-y-z}\text{N}_m\text{PnAs}_{1-m-n}$ ($0 \leq x, 0 \leq y, 0 \leq z, 0 \leq x+y+z \leq 1, 0 < m, 0 \leq n, 0 < \text{including } m+n \leq 1$) layer (14) and p type $\text{In}_x\text{Al}_y\text{Ga}_z\text{B}_{1-x-y-z}\text{N}_m\text{PnAs}_{1-m-n}$ ($0 \leq x, 0 \leq y, 0 \leq z, 0 \leq x+y+z \leq 1, 0 < m, 0 \leq n, 0 < \text{including } m+n \leq 1$) layer (19) and an electrode (22). In such a composition, the surface oxygen concentration of the p type $\text{In}_x\text{Al}_y\text{Ga}_z\text{B}_{1-x-y-z}\text{N}_m\text{PnAs}_{1-m-n}$ layer 19 is specified not to exceed $5 \times 10^{18} \text{cm}^{-3}$.



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